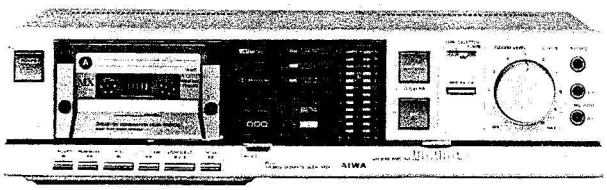
STEREO CASSETTE DECK

MODEL NO. AD-3200E,K

AIWA®

[SERVICE MANUAL]

Code No. 04-320-000-18



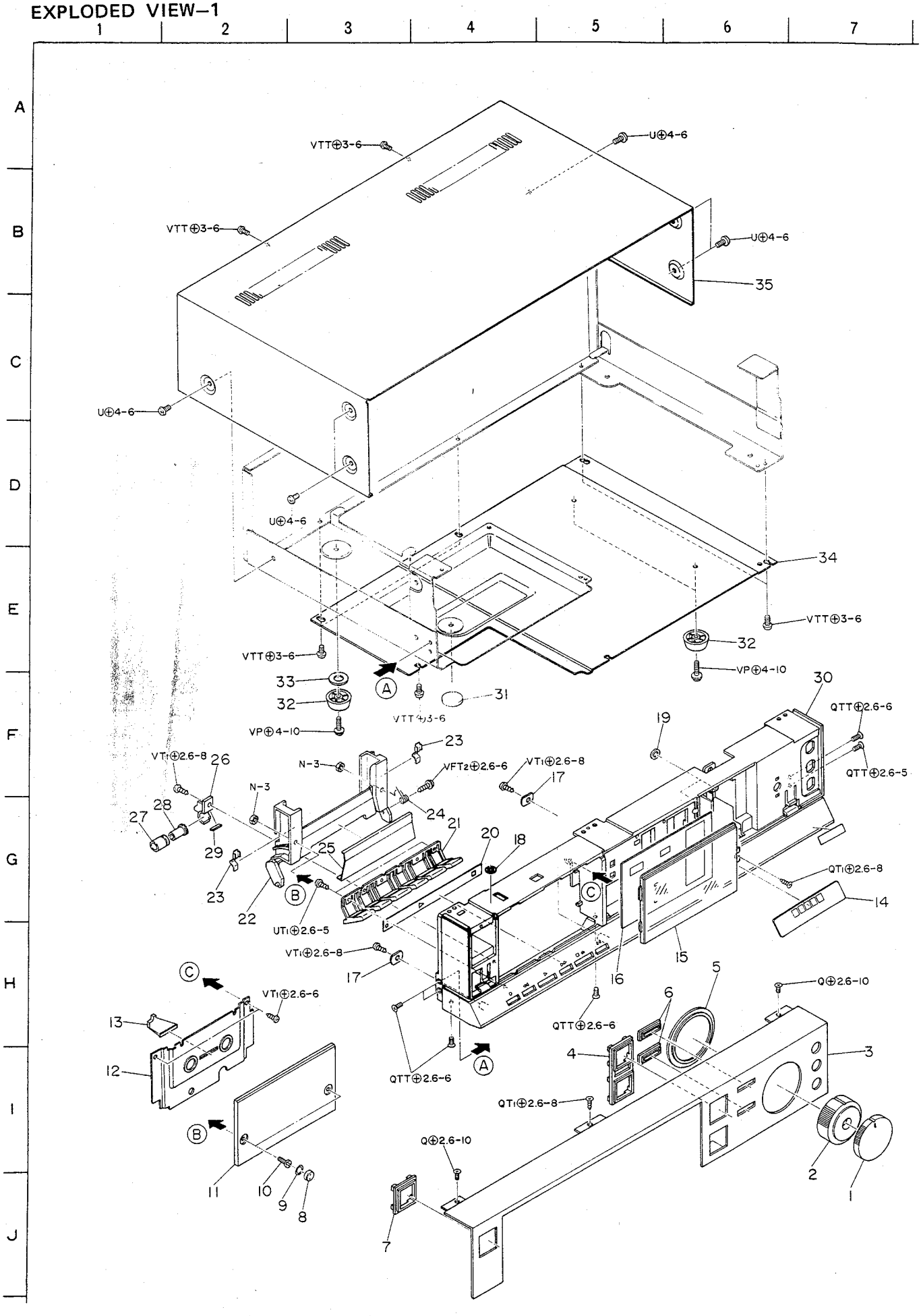
DATE OF ISSUE 7/1981

SPECIFICATIONS

Semiconductors:	6 ICs, 61 transistors, 40 diodes, 32 LED's
Power supply:	E model AC 220V, 50/60 Hz K model AC 240V, 50/60 Hz
Power consumption:	14W
Dimensions:	420(W) x 110(H) x 250(D) mm
Weight:	5.5 kg
Track type:	4 tracks 2 channel
Tape speed:	4.8 cm/s ± 1.5%
Wow and flutter:	Less than 0.038% (WRMS)
Automatic stop system:	Full auto stop
Automatic shut-off action time:	Less than 5s.
Pinch roller pressure:	125 ± 15 g (1.23 ± 0.15N)
Take-up torque:	35 $^{+15}_{-5}$ g-cm (343 $^{+147}_{-49}$ mN·m)
FF & rewind torque:	110 ± 20 g-cm (1078 ± 196 mN·m)
FF & rewind time:	90 ± 5 s. (C-60)
Playback output: (TTA-161)	0.775 ± 0.05V (LINE)
Playback noise:	Less than 1.8mV (METAL, CrO_2, DOLBY B NR ON) Less than 2.2 mV (LH DOLBY NR B ON)
Rec./PB output: (TTA-119G)	0 VU ± 1 dB (LINE)
Rec./Pb distortion:	Less than 1.5% (METAL) Less than 2.0% (CrO_2) Less than 1.5% (LH)
Rec./Pb SN ratio: (Unweighted)	More than 41/46 dB (METAL, DOLBY NR B OFF/ON) More than 43/46 dB (CrO_2, DOLBY NR B OFF/ON) More than 41/46 dB (LH, DOLBY NR B OFF/ON)
(WTD-A)	More than 70 dB
(400Hz, THD3%)	(METAL, CrO_2, DOLBY NR C ON) More than 67 dB (LH DOLBY NR C ON)
Channel separation: (1 kHz, 0 VU)	More than 30 dB
Cross talk: (1 kHz, 0 VU)	More than 60 dB
Erasing ratio: (125 Hz, 0 VU, +10 dB)	More than 57 dB
Bias frequency:	85 kHz
Frequency response:	METAL 20 ~ 18,000 Hz CrO_2 20 ~ 17,000 Hz LH 20 ~ 16,000 Hz
Motor:	DC EG motor
Head:	DX head (for Rec/Pb) Ferrite head (for Erase)
Inputs:	MIC max. senstivity 0.3 mV (200 Ω ~ 10 kΩ suitable) LINE IN max. sensitivity 50 mV (Optimum load impedance more than 50 kΩ)
Outputs:	LINE OUT Standard level 0.55V (0 VU) (Optimum load impedance more than 50 kΩ) PHONES 8Ω

- Specifications and external appearance are subject to change without due to product improvement.
- Noise Reduction System and Headroom Extension System manufactured under license from Dolby Laboratories Licensing Corporation.
- The name "Dolby" and DD symbol are trademarks of Dolby Laboratories Licensing Corporation.

EXPLODED VIEW–1



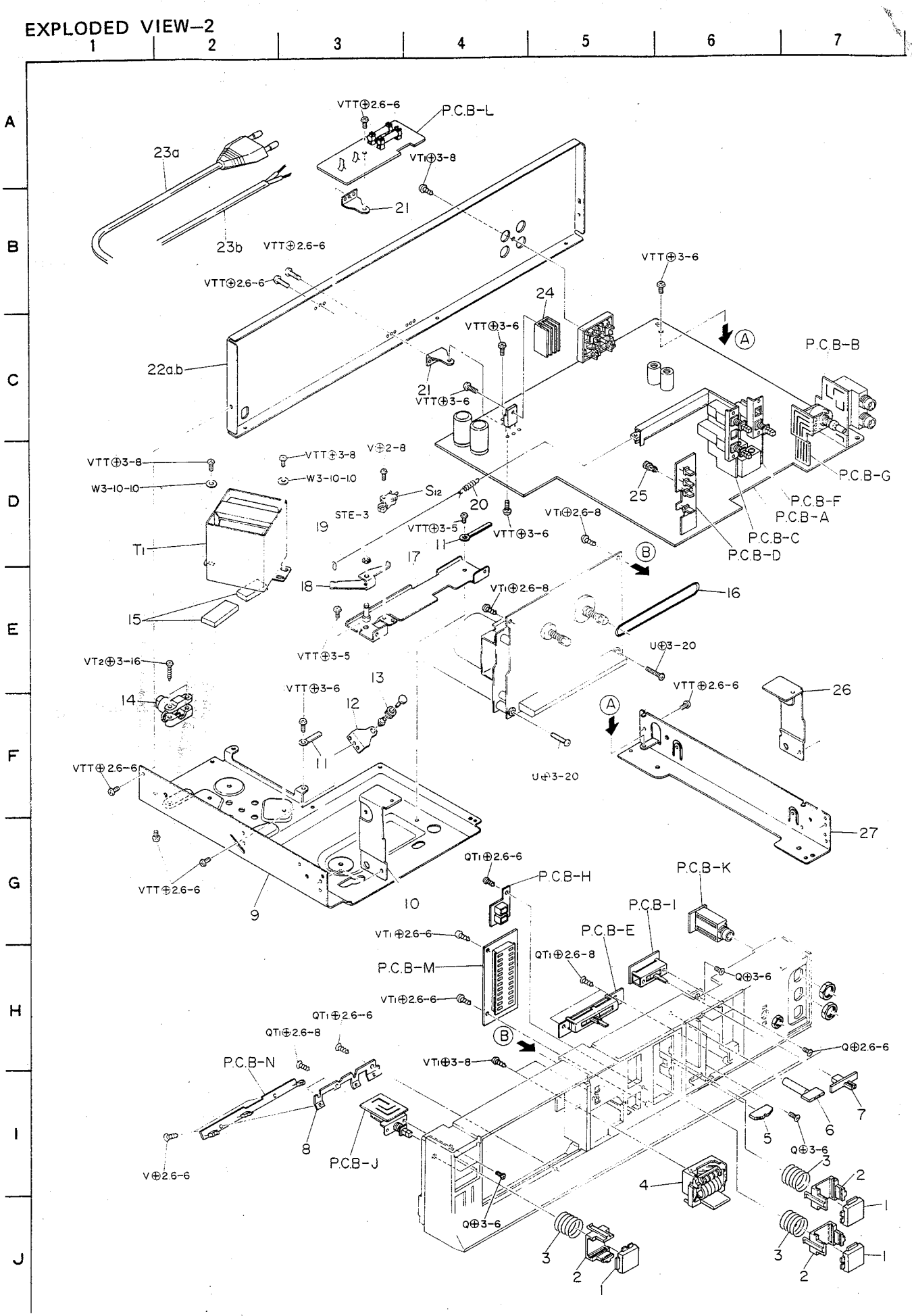
PARTS LIST

MECHANICAL PARTS

■ * mark in this part list shows exclusive part

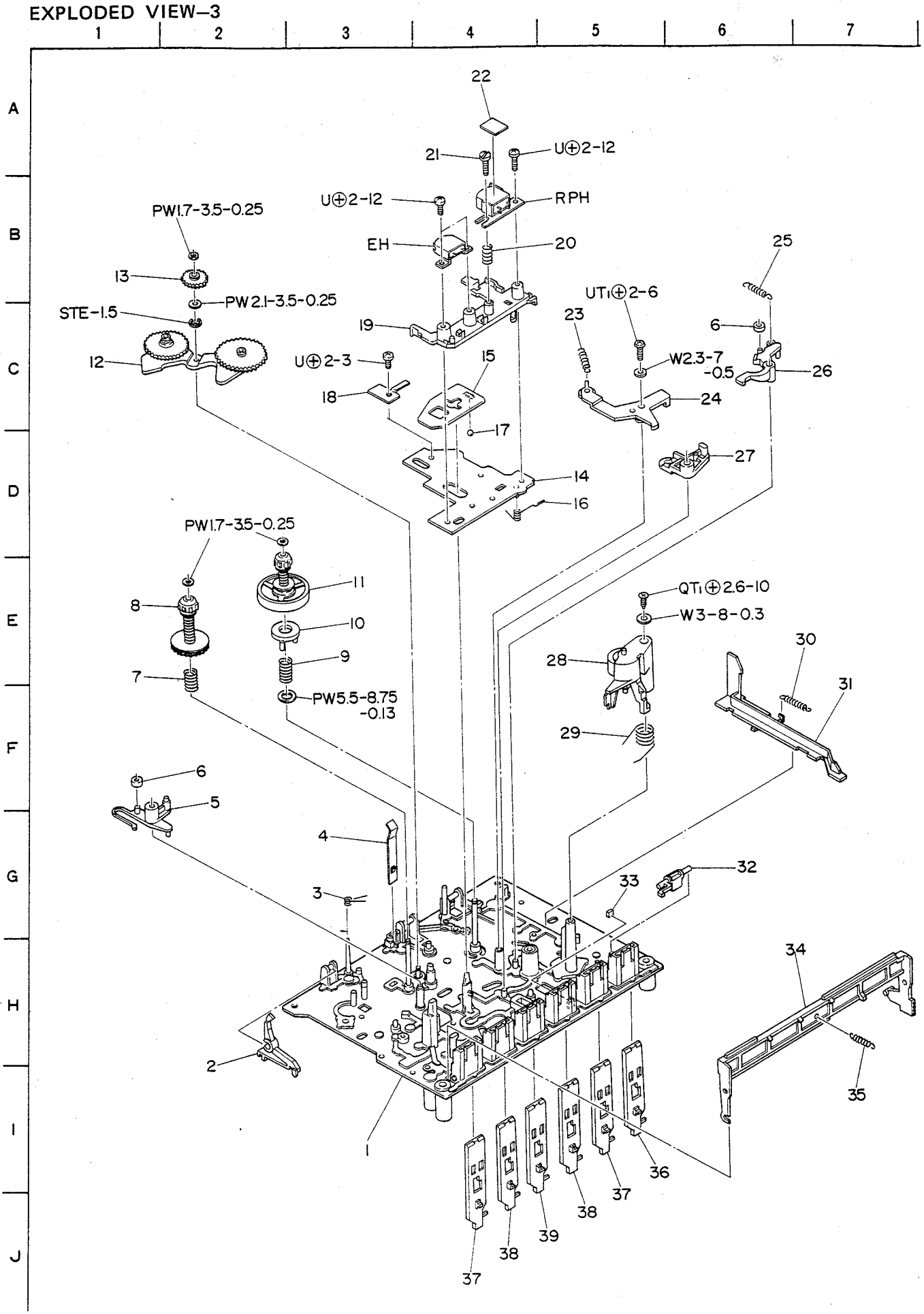
Ref. No.	Pat No.	Part No. Changed to	Description	Common Model	Q'ty	
1-1	82-176-009-01		Knob, REC A_2	AD-3100	1	
1-2	82-175-029-01		Knob, REC B	AD-3500	1	
1-3	82-177-001-01		Panel, Front C	*	1	
1-4	82-175-031-01		Guide, DOLBY	AD-3500	1	
1-5	82-175-008-01		Decorative ring	AD-3500	1	
1-6	82-175-032-01		Guide, FUNCTION	AD-3500	1	
1-7	82-176-016-01		Guide, DOLBY 2	AD-3100	1	
1-8	82-175-010-01		Cap	AD-3500	2	
1-9	82-176-215-01		Adhesive sheet, 7ϕ	AD-3100	2	
1-10	82-175-213-01		Screw, 3-6.5	AD-3500	2	
1-11	82-175-004-01		Window, Cassette	AD-3500	1	
1-12	82-175-033-01		Cassette plate	AD-3500	1	
1-13	82-304-044-01		Guide, Light		1	
1-14	82-175-036-01		Instruction sheet, Bias	AD-3500	1	
1-15	82-175-011-01		Window, Meter	AD-3500	1	
1-16	82-177-005-01		Plate, Meter	*	1	
1-17	82-176-216-01		Leaf washer, 9.6-13-0.8	AD-3100	2	
1-18	87-081-910-01		FW 4-8-0.65		1	
1-19	87-081-911-01		FW 3.6-8-0.5		2	
1-20	82-176-218-01		Himeron cloth, Bottom	AD-3100	1	
1-21	82-175-034-01		Push-key	AD-3500	1	
1-22	82-177-003-01		Cassette box, C	*	1	
1-23	82-175-203-01		P-spring, Cassette holder	AD-3500	1	
1-24	82-175-212-01		T-spring, Cassette open	AD-3500	1	
1-25	82-177-002-01		Decorative plate B, Cassette	*	1	
1-26	82-175-210-01		Holder, Oil dump	AD-3500	1	
1-27	82-175-207-01		Oil-dump bearing	AD-3500	1	
1-28	82-534-264-01		Gear, Oil dump		1	
1-29	82-176-220-01		G-cushion, Oil dump	AD-3100	1	
1-30	82-177-008-01		Cabinet, Front C	*	1	
1-31	82-168-025-01		Rubber foot	AD-3600	1	
1-32	87-085-161-01		Foot		1	
1-33	82-162-228-01		G-cushion, Foot		1	
1-34	82-168-018-01		Cabinet, Bottom	AD-3600	1	
1-35	82-175-009-01		Cabinet, Steel	AD-3500	1	

EXPLODED VIEW–2



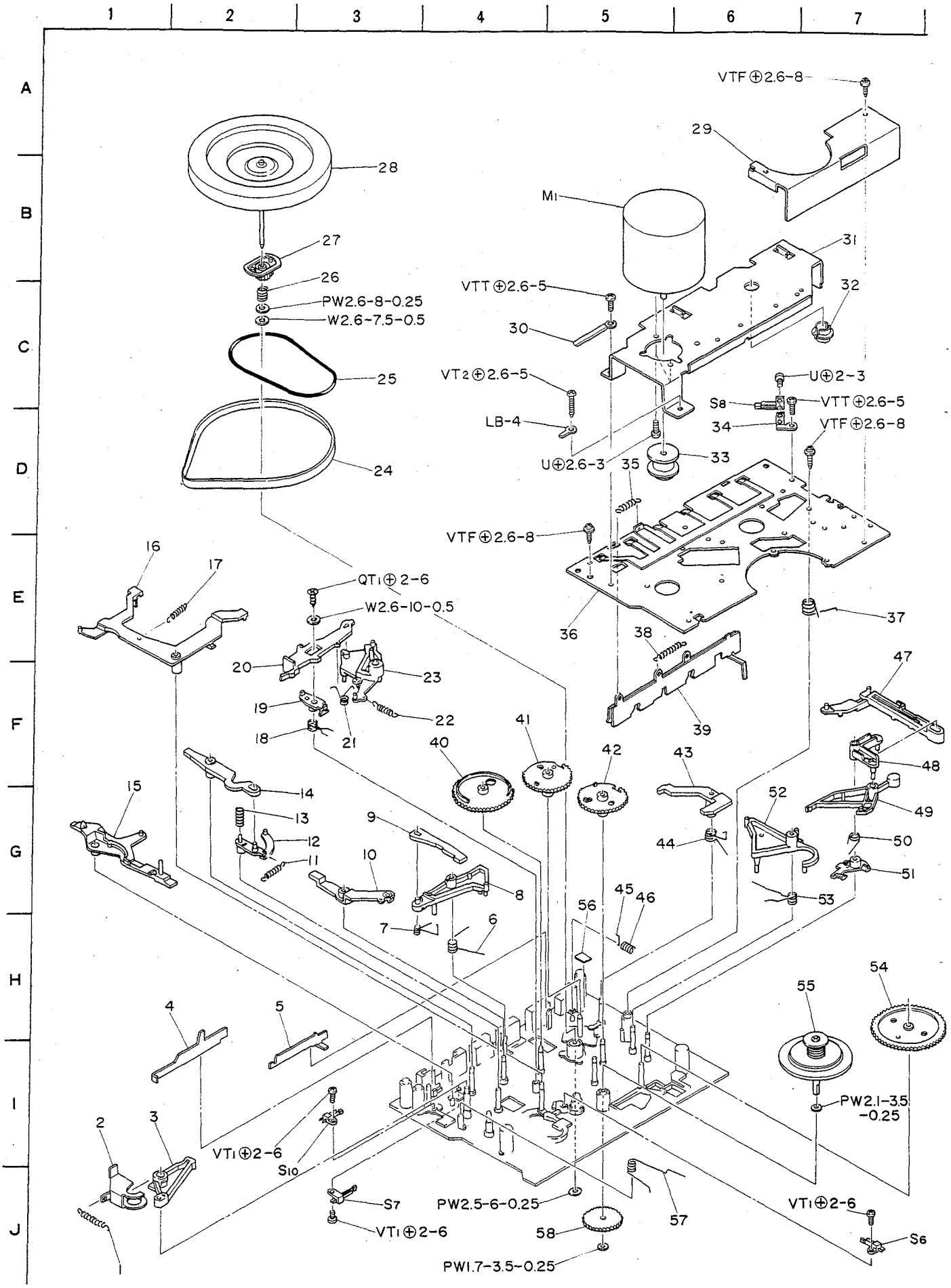
Ref. No.	Pat No.	Part No. Changed to	Description	Common Model	Q'ty	
2-1	82-176-005-01		Push-button, POWER B	AD-3100	3	
2-2	82-175-203-01		Holder, Power-button	AD-3500	3	
2-3	82-175-205-01		C-spring, POWER	AD-3500	3	
2-4	87-040-146-01		Counter		1	
2-5	82-176-008-01		Knob, Slide volume B	AD-3100	1	
2-6	82-176-006-01		Push-button, FUNCTION B	AD-3100	1	
2-7	82-176-007-01		Knob, Slide switch B	AD-3100	1	
2-8	82-175-202-01		Holder, Circuit board	AD-3500	1	
2-9	82-175-208-01		Chassis A, Amp.	AD-3500	1	
2-10	82-176-212-01		Holder, Cabinet L	AD-3100	1	
2-11	87-038-039-01		Wire binder		2	
2-12	82-176-204-01		Holder, Pulley	AD-3100	1	
2-13	87-071-019-01		Roller 7ϕ		1	
2-14	87-085-166-01		Holder, AC power cord		1	
2-15	82-168-232-01		U-cushion	AD-3600	2	
2-16	82-538-210-01		Belt, Counter		1	
2-17	82-176-202-01		Holder, Mechanism ass'y	AD-3100	1	
2-18	82-176-201-01		Lever, REC	AD-3100	1	
2-19	82-176-211-01		String, REC switch	AD-3100	1	
2-20	82-176-205-01		E-spring, REC	AD-3100	1	
2-21	82-168-213-01		Holder, Circuit board	AD-3600	1	
2-22a	82-177-004-01		Panel, Rear E (E model only)	*	1	
2-22b	82-177-010-01		Panel, Rear K (K model only)	*	1	
2-23a	87-034-877-01		AC power cord, EE (E model only)		1	
2-23b	87-034-872-01		AC power cord, BS (K model only)		1	
2-24	82-304-656-01		Heat sink		1	
2-25	87-084-063-01		Nylon rivet, 3-55		1	
2-26	82-176-213-01		Holder, Cabinet R	AD-3100	1	
2-27	82-175-209-01		Chassis B, Amp.	AD-3500		

EXPLODED VIEW–3



Ref. No.	Pat No.	Part No. Changed to	Description	Common Model	Q'ty	
3-1	82-585-325-01		Outsert ass'y		1	
3-2	82-858-255-01		REC blocking lever		1	
3-3	82-585-294-01		T-spring, Center shift		1	
3-4	82-585-319-01		P-spring, Cassette holder		1	
3-5	82-585-252-01		Lever, Brake L		1	
3-6	82-585-286-01		G-cushion, Brake		2	
3-7	82-585-290-01		C-spring, Back tension		1	
3-8	82-585-215-01		Supply reel platform ass'y		1	
3-9	82-585-292-01		C-spring, slip disk		1	
3-10	82-585-272-01		Slip disk T		1	
3-11	82-585-210-01		Take-up reel platform ass'y		1	
3-12	82-585-231-01		FR Lever ass'y		1	
3-13	82-585-235-01		Gear, REW A		1	
3-14	82-585-208-01		Chassis, Slide		1	
3-15	82-585-284-01		P-spring, Slide		1	
3-16	82-585-295-01		T-spring, Slide		1	
3-17	87-073-005-01		Steel ball 2ϕ		1	
3-18	82-585-349-01		Holder, Idler lever		1	
3-19	82-585-209-01		Head base		1	
3-20	82-585-291-01		C-spring, RPH		1	
3-21	82-176-219-01		Azimuth adjust screw	AD-3100	1	
3-22	87-057-620-01		Label, Head		1	
3-23	82-585-313-01		E-spring, Play idler		1	
3-24	82-585-223-01		Play idler lever ass'y		1	
3-25	82-585-312-01		E-spring, Brake R		1	
3-26	82-585-253-01		Lever, Brake R		1	
3-27	82-585-265-01		Lever, REV		1	
3-28	82-585-364-01		Pinch Lever B ass'y		1	
3-29	82-585-296-01		T-spring, Pinch lever		1	
3-30	82-585-311-01		E-spring, Lid lock		1	
3-31	82-585-254-01		Eject slide plate		1	
3-32	82-585-279-01		Eject lever A		1	
3-33	82-585-338-01		G-cushion, Play lever		1	
3-34	82-585-278-01		Lock plate		1	
3-35	82-585-317-01		E-spring, Lock button		1	
3-36	82-585-361-01		Plate, PAUSE button		1	
3-37	82-585-337-01		Plate, REC button		2	
3-38	82-585-343-01		Plate, FR button A		2	
3-39	82-585-277-01		Plate, FR button		1	

EXPLODED VIEW–4



Ref. No.	Pat No.	Part No. Changed to	Description	Common Model	Q'ty
4-1	82-585-314-01		E-spring, REC		1
4-2	82-585-267-01		REC Lever B		1
4-3	82-585-266-01		REC Lever A		1
4-4	82-585-281-01		Slide plate, Motor switch		1
4-5	82-585-283-01		Slide plate, FR auto		1
4-6	82-585-306-01		T-spring, Play lever		1
4-7	82-585-307-01		T-spring, REC lever		1
4-8	82-585-249-01		Lever, Play		1
4-9	82-585-250-01		Lever, REC drive		1
4-10	82-585-258-01		Trigger Lever, PLAY		1
4-11	82-585-308-01		E-spring, REW lever		1
4-12	82-585-260-01		Lever, REW		1
4-13	82-439-369-01		Slip spring	TPR-300	1
4-14	82-585-259-01		Trigger Lever, REW		1
4-15	82-585-261-01		Trigger Lever, REC		1
4-16	82-585-257-01		Trigger Lever, FF		1
4-17	82-585-301-01		E-spring, Trigger PLAY		1
4-18	82-585-297-01		T-spring, FR lever A		1
4-19	82-585-264-01		FR Lever D		1
4-20	82-585-263-01		FR Lever C		1
4-21	82-585-298-01		T-spring, FR lever B		1
4-22	82-585-311-01		E-spring, Lid lock		2
4-23	82-585-262-01		FR lever B		1
4-24	82-176-207-01		Rubber belt, Flywheel B	AD-3100	1
4-25	82-585-336-01		Rubber belt, FR B		1
4-26	82-176-208-01		C-spring, Flywheel B	AD-3100	1
4-27	82-585-243-01		Gear, Flyweel		1
4-28	82-585-229-01		Flywheel ass'y		1
4-29	82-176-217-01		Cover, auto gear	AD-3100	1
4-30	87-038-039-01		Wire binder		1
4-31	82-585-281-01		Holder, Motor		1
4-32	82-585-326-01		Thrust bearing B		1
4-33	82-585-242-01		Motor pulley		1
4-34	82-585-323-01		Holder, PAUSE switch		1
4-35	82-585-315-01		E-spring, Slide plate		1
4-36	82-585-203-01		Mechanism chassis B ass'y		1
4-37	82-585-321-01		T-spring, Auto kick		1
4-38	82-585-332-11		E-spring, REC lock		1
4-39	82-585-327-01		Slide plate key ass'y		1
4-40	82-585-244-01		Gear, Play cam		1
4-41	82-585-246-01		Gear, PAUSE cam		1
4-42	82-585-245-01		Gear, FR cam		1
4-43	82-585-256-01		Trigger lever, PAUSE		1
4-44	81-585-304-01		T-spring, Trigger PAUSE		1
4-45	82-585-362-01		Shaft lock B		1
4-46	82-585-285-01		C-spring, Lock		1
4-47	82-585-270-01		Plate, Auto kick		1
4-48	82-585-269-01		Lever, auto B		1
4-49	82-585-268-01		Lever, auto A		1
4-50	82-585-299-01		T-spring, Auto eject		1
4-51	82-585-271-01		Lever, Auto eject		1
4-52	82-585-248-01		Lever, PAUSE		1
4-53	82-585-300-01		T-spring, FR cam		1
4-54	82-585-247-01		Gear, Auto kick		1
4-55	82-587-217-01		FR slip pulley ass'y	CS-880	1
4-56	82-585-357-01		Mylar 4-6-0.1		1
4-57	82-585-303-01		T-spring, Trigger REC		1
4-58	82-585-216-01		Gear, Drive		1

ACCESSORIES/PACKAGE

Ref. No.	Part No.	Part No. Changed to	Description	Common Model	Q'ty	
1	82-177-851-01		Printed indiv., Packing	*	1	
2	82-176-852-01		Cushion L, Printed indiv.	*	1	
3	82-176-853-01		Cushion R, Printed indiv.	*	1	
4	87-051-136-11		Poly-vinyl sack		1	
5	87-056-607-01		Poly-vinyl sack		1	
6a	82-177-901-01		Instructions booklet (E model only)	*	1	
6b	82-177-902-01		Instructions booklet (K model only)	*	1	
7	87-051-175-01		Poly-tube A		1	
8	87-056-008-11		Label, AC power cord (K model only)		1	
9	86-944-012-01		Connection cord, CW-129BSK		2	
10	87-056-009-41		Distributors list		2	

AIWA

ELECTRICAL MAIN PARTS LIST

Symbol No.	Part No.	Description
≪MAIN CIRCUIT BOARD SECTION≫		
PCB-A	*	Main circuit board
IC1,2	87-027-738-01	IC, HA11226
IC5	87-027-235-01	IC, NJM4558D
IC6	87-027-739-01	IC, NJM4556D
Q1	89-408-804-51	Transistor, 2SD880Y(GR)
Q2,4,5,6, 703,704	89-318-156-01	Transistor, 2SC1815(BL)
Q3	89-313-834-51	Transistor, 2SC1383RS
Q7,821,822	89-107-335-01	Transistor, 2SA733(K)
Q101,701, 702	89-320-011-01	Transistor, 2SC2001(K)
Q102	89-313-846-01	Transistor, 2SC1384(R)
Q301,302, 303,304	89-322-406-01	Transistor, 2SC2240(BL)
Q305,306, 307,308, 501,502, 503,504, 601,602, 603,604, 605,606, 607,608, 609,610, 611,612, 801~820, 823,824	89-309-456-01	Transistor, 2SC945L(P)
D1	87-027-662-01	Zener diode, HZ22-1L
D2	87-027-686-01	Zener diode, HZ12A1
D3,4	87-027-376-01	Diode, 1B4B41
D5	87-027-365-01	Diode, S5277B
D6,7,8,9, 10,12,13, 14,803, 804,807, 808,809, 810,813, 814,815, 816,817, 821,822, 823,824	87-027-097-01	Diode, 1S1555
D11	87-027-479-01	Zener diode, HZ27-2
D701,702, 805,806, 811,812, 819,820	88-052-188-01	Diode, 1S188(FM)
D801,802, 825	87-027-475-01	Zener diode, HZ-6B1
L101	82-176-628-01	OSC coil
L601,602	82-304-701-01	Coil, 22mH
L603,604	87-005-093-01	Micro inductor coil, 4.7mH
L801,802, 803,804	87-005-147-01	Coil, 36mH
LPF1,2	87-030-061-01	Low-pass filter, 85K
J1,2,3,4	87-049-055-01	Pin jack, 4P (LINE IN L,R, LINE OUT L,R)
S1	82-177-632-01	Slide switch (REC/PB)
SFR101,102	87-021-570-01	Semi-fixed resistor, 100kΩ-B
SFR301,302, 701,702	87-021-569-01	Semi-fixed resistor, 50kΩ-B
SFR601,602	87-021-568-01	Semi-fixed resistor, 20kΩ-B
SFR801,802, 803,804	87-021-565-01	Semi-fixed resistor, 2kΩ-B
SFR805,806	87-021-567-01	Semi-fixed resistor, 10kΩ-B
		< Resistors >
⚠R101	87-029-029-01	68Ω ¼W Fuse resistor
R7,8	87-025-323-01	180Ω 2W Metal film resistor
R10	87-025-072-01	100Ω 1W Metal film resistor
R829,830	87-025-271-01	5.1kΩ ¼W Metal film resistor
R823,824, 863,864	87-025-272-01	13kΩ ¼W Metal film resistor
		< Capacitors >
C835,836	87-015-329-01	0.33μF 50V Electrolytic LL
C301,302	87-015-247-01	10μF 25V Electrolytic LL
C853,854	87-015-427-01	0.15μF 25V Aluminum solid
C833,834	87-015-429-01	0.33μF 25V Aluminum solid
C617,618	87-014-037-01	150pF PP
C105	87-014-128-01	1500pF 630V PP
C859,860 863,864	87-014-063-01	1800pF PP
C815,816, 823,824, 845,846, 869,870	87-014-118-81	0.015μF ±2% PP
≪MIC CIRCUIT BOARD SECTION≫		
PCB-B	*	MIC circuit board
J5,6	87-049-051-01	Jack, 3.5φ w/switch
≪DOLBY SW CIRCUIT BOARD SECTION≫		
PCB-C	*	Dolby SW circuit board
S2,4	82-175-627-01	Push-switch (DOLBY-NR, DOLBY B/C)
PIN	87-032-638-01	Pin, 8P
≪LED-1 CIRCUIT BOARD SECTION≫		
PCB-D	*	LED-1 circuit board
D51	87-027-671-01	LED, LN417YP
D52	87-027-543-01	LED, LN317GP
D53	87-027-542-01	LED, LN217RP
≪LH BIAS FINE CIRCUIT BOARD SECTION≫		
PCB-E	*	LH bias fine circuit board
VR2	87-021-680-01	Slide volume 500Ω-B (LH BIAS FINE)
≪MPX FILTER SW CIRCUIT BOARD SECTION≫		
PCB-F	*	MPX filter SW circuit board
S3	82-177-630-01	Push-switch (MPX FILTER)
PIN	87-032-636-01	Pin, 6P
≪REC VR CIRCUIT BOARD SECTION≫		
PCB-G	*	REC VR circuit board
VR1	87-021-679-01	Volume, 50kΩ-A (RECORD LEVEL)
PIN	87-032-635-01	Pin, 5P
≪LED-2 CIRCUIT BOARD SECTION≫		
PCB-H	*	LED-2 circuit board
D54	87-027-778-01	LED, LT9000D (R)
D55	87-027-779-01	LED, LT9002N (G)
≪TAPE SELECTOR CIRCUIT BOARD SECTION≫		
PCB-I	*	Tape selector circuit board
S5	82-160-628-01	Slide switch (TAPE SELECTOR)
≪POWER SW CIRCUIT BOARD SECTION≫		
⚠PCB-J	*	Power SW circuit board
⚠S11	87-031-668-01	Push-switch (POWER)
≪HEADPHONE CIRCUIT BOARD SECTION≫		
PCB-K	*	Headphone circuit board
J7	82-168-633-01	Jack, 6.3φ(PHONES)
PIN	87-032-633-01	Pin, 3P
≪FUSE CIRCUIT BOARD SECTION≫		
⚠PCB-L	82-177-625-01	Fuse circuit board
⚠F1,2	87-035-219-01	Fuse, "T" 500mA
	87-098-013-01	Fuse label, "T" 500mA
⚠	87-033-147-01	Fuse clamp
≪LED MODULE CIRCUIT BOARD SECTION≫		
PCB-M	87-027-759-01	LED module circuit board
≪LED-3 CIRCUIT BOARD SECTION≫		
PCB-N	82-176-639-01	LED-3 circuit board
D56	87-027-646-01	LED, SEL1112R
D57	87-027-647-01	LED, SEL1941D
D58	87-027-648-01	LED, SEL1331G
≪MISCELLANEOUS≫		
⚠T1	82-176-653-01	Power transformer (E model only)
⚠T1	82-176-654-01	Power transformer (K model only)
RPH	87-046-200-01	REC/PB head
EH	87-046-196-01	Erase head
M1	87-045-135-01	Motor, DC-EG
PL1	82-176-635-01	Pilot lamp, 14V 40mA
S6,7	87-031-615-01	Leaf switch (CUE/REV, PLAY)
S8	87-031-548-01	Leaf switch (PAUSE)
S9	87-031-491-01	Micro switch (REC)
S10	87-031-361-01	Leaf switch (MOTOR)
⚠	87-034-877-01	AC power cord (E model only)
⚠	87-034-872-01	AC power cord (K model only)

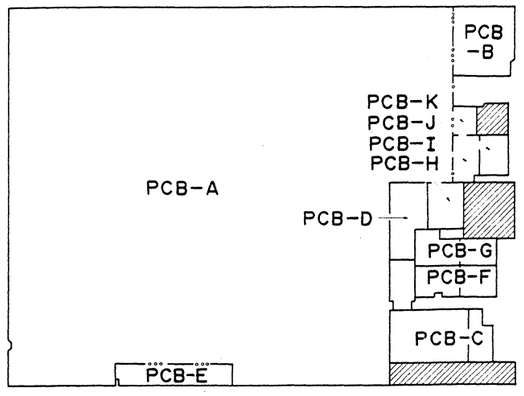
⚠ Safety component symbol

This symbol is given to important parts which serve to maintain the safety of the product, and which are made to conform to special safety specifications. Therefore, when replacing a component with this symbol, make absolutely sure that you use a designated part.

Note; Combination Circuit Board

The parts on the electrical parts list which are indicated by an asterisk (*) are supplied as one single combined circuit board. Therefore, they will not be supplied separately. If this becomes necessary, please order the entire circuit board.

Combination circuit board A 82-177-601-01



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Symbol No.	Part No.	Description
SFR805,806	87-021-567-01	Semi-fixed resistor, 10kΩ-B
		< Resistors >
⚠R101	87-029-029-01	68Ω ¼W Fuse resistor
R7,8	87-025-323-01	180Ω 2W Metal film resistor
R10	87-025-072-01	100Ω 1W Metal film resistor
R829,830	87-025-271-01	5.1kΩ ¼W Metal film resistor
R823,824, 863,864	87-025-272-01	13kΩ ¼W Metal film resistor
		< Capacitors >
C835,836	87-015-329-01	0.33μF 50V Electrolytic LL
C301,302	87-015-247-01	10μF 25V Electrolytic LL
C853,854	87-015-427-01	0.15μF 25V Aluminum solid
C833,834	87-015-429-01	0.33μF 25V Aluminum solid
C617,618	87-014-037-01	150pF PP
C105	87-014-128-01	1500pF 630V PP
C859,860 863,864	87-014-063-01	1800pF PP
C815,816, 823,824, 845,846, 869,870	87-014-118-81	0.015μF ±2% PP
≪MIC CIRCUIT BOARD SECTION≫		
PCB-B	*	MIC circuit board
J5,6	87-049-051-01	Jack, 3.5φ w/switch
≪DOLBY SW CIRCUIT BOARD SECTION≫		
PCB-C	*	Dolby SW circuit board
S2,4	82-175-627-01	Push-switch (DOLBY-NR, DOLBY B/C)
PIN	87-032-638-01	Pin, 8P
≪LED-1 CIRCUIT BOARD SECTION≫		
PCB-D	*	LED-1 circuit board
D51	87-027-671-01	LED, LN417YP
D52	87-027-543-01	LED, LN317GP
D53	87-027-542-01	LED, LN217RP
≪LH BIAS FINE CIRCUIT BOARD SECTION≫		
PCB-E	*	LH bias fine circuit board
VR2	87-021-680-01	Slide volume 500Ω-B (LH BIAS FINE)
≪MPX FILTER SW CIRCUIT BOARD SECTION≫		
PCB-F	*	MPX filter SW circuit board
S3	82-177-630-01	Push-switch (MPX FILTER)
PIN	87-032-636-01	Pin, 6P
≪REC VR CIRCUIT BOARD SECTION≫		
PCB-G	*	REC VR circuit board
VR1	87-021-679-01	Volume, 50kΩ-A (RECORD LEVEL)
PIN	87-032-635-01	Pin, 5P
≪LED-2 CIRCUIT BOARD SECTION≫		
PCB-H	*	LED-2 circuit board
D54	87-027-778-01	LED, LT9000D (R)
D55	87-027-779-01	LED, LT9002N (G)
≪TAPE SELECTOR CIRCUIT BOARD SECTION≫		
PCB-I	*	Tape selector circuit board
S5	82-160-628-01	Slide switch (TAPE SELECTOR)

Symbol No.	Part No.	Description
≪POWER SW CIRCUIT BOARD SECTION≫		
⚠PCB-J	*	Power SW circuit board
⚠S11	87-031-668-01	Push-switch (POWER)
≪HEADPHONE CIRCUIT BOARD SECTION≫		
PCB-K	*	Headphone circuit board
J7	82-168-633-01	Jack, 6.3φ(PHONES)
PIN	87-032-633-01	Pin, 3P
≪FUSE CIRCUIT BOARD SECTION≫		
⚠PCB-L	82-177-625-01	Fuse circuit board
⚠F1,2	87-035-219-01	Fuse, "T" 500mA
	87-098-013-01	Fuse label, "T" 500mA
⚠	87-033-147-01	Fuse clamp
≪LED MODULE CIRCUIT BOARD SECTION≫		
PCB-M	87-027-759-01	LED module circuit board
≪LED-3 CIRCUIT BOARD SECTION≫		
PCB-N	82-176-639-01	LED-3 circuit board
D56	87-027-646-01	LED, SEL1112R
D57	87-027-647-01	LED, SEL1941D
D58	87-027-648-01	LED, SEL1331G
≪MISCELLANEOUS≫		
⚠T1	82-176-653-01	Power transformer (E model only)
⚠T1	82-176-654-01	Power transformer (K model only)
RPH	87-046-200-01	REC/PB head
EH	87-046-196-01	Erase head
M1	87-045-135-01	Motor, DC-EG
PL1	82-176-635-01	Pilot lamp, 14V 40mA
S6,7	87-031-615-01	Leaf switch (CUE/REV, PLAY)
S8	87-031-548-01	Leaf switch (PAUSE)
S9	87-031-491-01	Micro switch (REC)
S10	87-031-361-01	Leaf switch (MOTOR)
⚠	87-034-877-01	AC power cord (E model only)
⚠	87-034-872-01	AC power cord (K model only)

⚠ Safety component symbol

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Note; Combination Circuit Board

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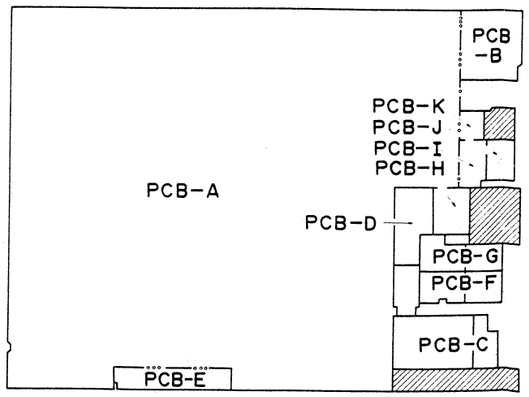
Combination circuit board A 82-177-601-01



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5 6 7 8 9 10 11 12 13 14 15 16 17 18 19

IC1 HA11226
DOLBY NR DECODE

IC6 NJM4556
HEADPHONE AMP

J3
LINE OUT(L)

K HEADPHONE C.B
J7
PHONES

S1-1~12 REC/PB (PB)
S2-1,2 DOLBY NR (OFF)
S3-1,2 MPX FILTER (OFF)
S4-1~4 DOLBY B.C SELECTOR (B)
S5-1,2 TAPE SELECTOR (CrO2)
S6 CUE/REV (OFF)
S7 PLAY (OFF)
S8 PAUSE (OFF)
S9 REC (PB)
S10 MOTOR (OFF)
S11-1,2 POWER (OFF)

Q823 2SC945L(P) PRE AMP

Q801, Q803 2SC945L(P) X2 SWITCHING

Q805, Q807, Q809 2SC945L(P) X3 SWITCHING

Q701 2SC2001(F) MUTING

IC5 NJM4558 PRE AMP

Q819 2SC945L(P) SWITCHING

Q607 2SC945L(P) REC AMP

Q703 2SC1815(BL) BUFFER AMP

IC IR2E05

M LED MODULE C.B

MPX FILTER C.B

LPF 1

Q817 2SC945L(P) SWITCHING

Q821 2SA733(K) SWITCHING

Q601, Q603 2SC945L(P) X2 REC LEVEL SWITCHING

Q605 2SC945L(P) SWITCHING

Q609, Q611 2SC945L(P) X2 EQ SWITCHING

D825 HZ6B1

DOLBY SW C.B

Q7 2SA733(K) MUTING DRIVE

Q6, Q5, Q4 2SC1815(BL) SWITCHING

Q1 2SD880Y(GR) CONST VOLTAGE

Q2 2SC1815(BL) CONST VOLTAGE

Q3 2SC1383(RS) CONST VOLTAGE

POWER SWITCH C.B

FUSE C.B

E MODEL
AC220V 50/60Hz

K MODEL
AC240V 50/60Hz

LED-1 C.B

LED-2 C.B

LED-3 C.B

SELECTOR C.B

D51 LN417YP
D52 LN317GP
D53 LN217RP
D54 LT9000D(R)
D55 LT9002N(G)
D56 SEL1112R
D57 SEL1941D
D58 SEL1331G

REC PAUSE PLAY

2SA733 2SC945 2SC1383 2SC1384 2SC1815 2SC2001 2SC2240 2SD880

NOTES:

1) ■ B (+) power supply
2) ➡ Signal path
   ⇨ Rec path
3) The voltage is the reference value measured with a tester (20 k-ohms/V DC) when there are no signals.
   But ( ) is with recording.
   An asterisk (*) indicates that the value was measured with a vacuum-tube voltmeter during recording.
4) Resistors with no designation have a rated power of 1/4W and a tolerance of ±5%.
5) Capacitors with no designation have a dielectirc strneght of less than 50WV.
6) The only capacitor tolerances indicated are ±2% (G), ±5% (J) and ±10% (K).
7) Ceramic capacitor symbols:
   ⊣⊢ High dielectric constant system (YW, YP, YZ)
8) Explanation of symbols
   Ⓜ Mylar capacitor
   Ⓐ Aluminum solid capacitor
   PP Polypropylene film capacitor
   LL Low-leakage capacitor
   Fuse resistor
   Nonflammable resistor

⚠ Safety component symbol
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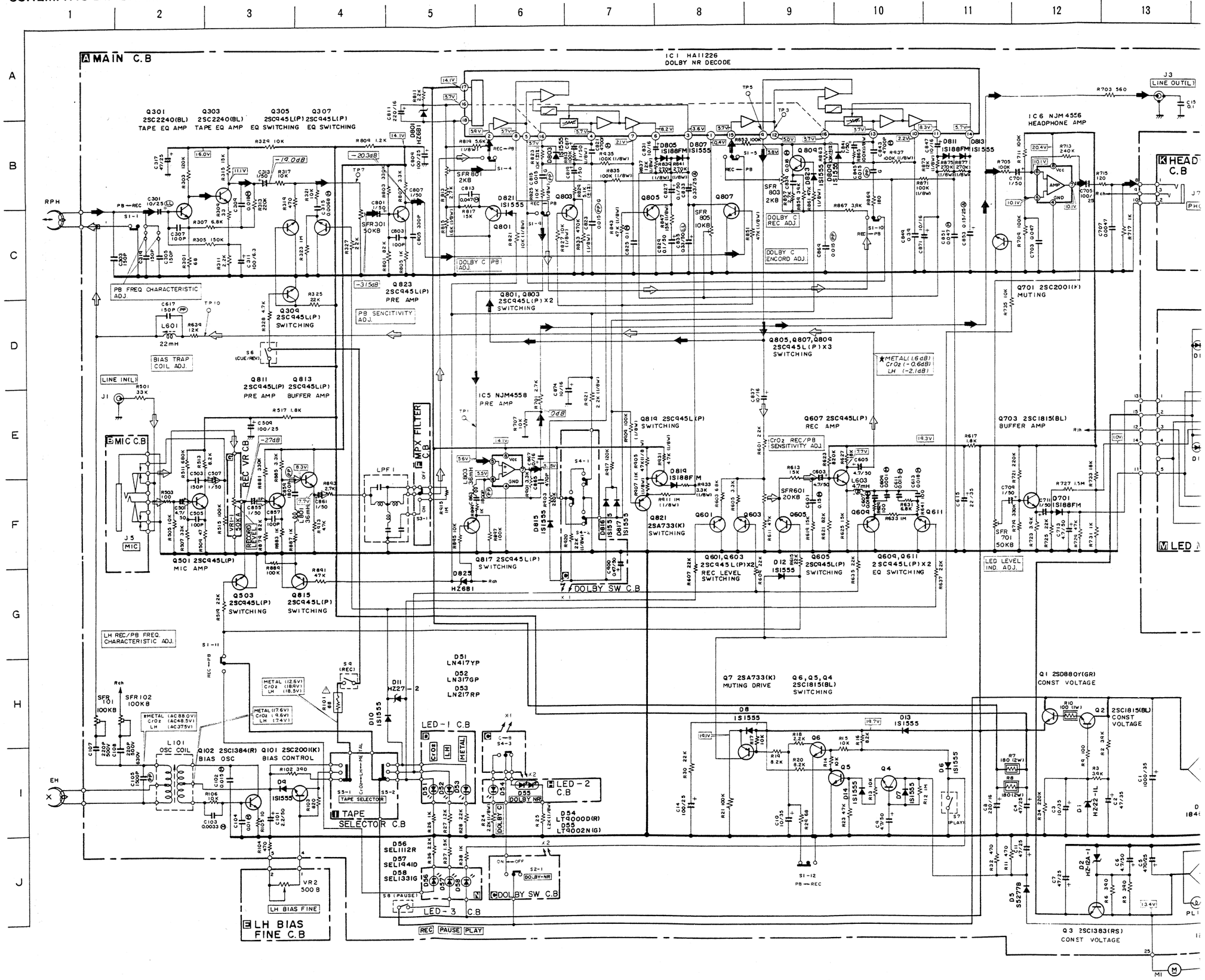
- This schematic diagram is subject to change without notice in the interests of improved performance.

AD-3200E,K AD-3200E,K

SCHEMATIC DIAGRAM



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WIRING—1

NOTES (1) B(+) Pattern Others pattern
(2) The voltage is the reference value measured with a tester (20 K oh
An asterisk (*) indicates that the value was measured with a vacu

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

A B C D E F G H I J

A MAIN C.B

6. Playback Sensitivity Adjustment
Settings:
- Playback mode
- Test tape: TTA-116
- TAPE SELECTOR switch: LH
- Adjustment locations: SFR301 (L-ch), SFR302 (R-ch)

Method:
Playback the test tape and adjust SFR301,302 so that the LINE output is 0.775V.

2. Azimuth Adjustment
Settings:
- Playback mode
- Test tape: TTA-117E
- TAPE SELECTOR switch: CrO_2
- Adjustment location: Azimuth adjusting screw

Method:
Playback the test tape and adjust so that the outout of the 10 kHz and 1 kHz section reaches the maximum and same phase for both the left and right channel.

7. Playback Frequency Characteristic Adjustment
Settings:
- Test tape: TTA-117E
- TAPE SELECTOR switch: CrO_2
- Adjustment locations: JMP1,3 (L-ch), JMP2,4 (R-ch)

Method:
Playback the 1 kHz and 10 kHz signals. Adjust JMP 1,2,3,4 so that the 1 kHz and 10 kHz output deviation are ±1 dB.

4. Dolby C Encord Adjustment
Settings:
- Recording mode
- Dolby NR switch: OFF → ON
- Dolby selector switch: C (Dolby NR switch to ON)
- Input signal: 700 Hz −20 dB
- Test point: TP3,5 (L-ch), TP4,6 (R-ch)
- Adjustment locatios: SFR805 (L-ch), SFR806 (R-ch)

Method:
Supply a 700Hz, −20 dB signal and adjust the RECORD VOLUME so that the test point TP3,4 output is made 23.5 mV. Next set the Dolby NR switch to ON and Dolby Selector switch to C and adjust the SFR805,806 so that the test point TP5,6 ouput is 83 mV.

TP4 Dolby Adjustment Test Point (R-ch)

TP3 Dolby Adjustment Test Point (L-ch)

I TAPE SELECTOR C.B

E1 E2 LH BIAS FINE C.B

S9 (REC)

Bias +B Pattern

TP9 Bias Trap Coil Adjustment (L-ch)

J1 (L)

LINE IN

J2 (R)

TP10 Bias Trap Coil Adjustment (R-ch)

J3 (L)

LINE OUT

J4 (R)

I TAPE SELECTOR C.B

TP7 Dolby Adjustment Test Point (L-ch)

TP8 Dolby Adjustment Test Point (R-ch)

TP1 Dolby Adjustment Test Point (L-ch)

TP2 Dolby Adjustment Test Point (R-ch)

TP5 Dolby C Encord Adjustment Test Point (L-ch)

TP6 Dolby C Encord Adjustment Test Point (R-ch)

K HEADPONE C.B

M VU METER C.B

H LED-2 C.B

J POWER SW C.B

S10 (MOTOR)

L FUSE C.B

PL1 (AMP)

GND

RPH

EH

G REC/VR C.B

F MPX FILTER SW C.B

LPF1 LPF2

G DOLBY SW C.B

H LED-2 C.B

D LED-1 C.B

N LED-3 C.B

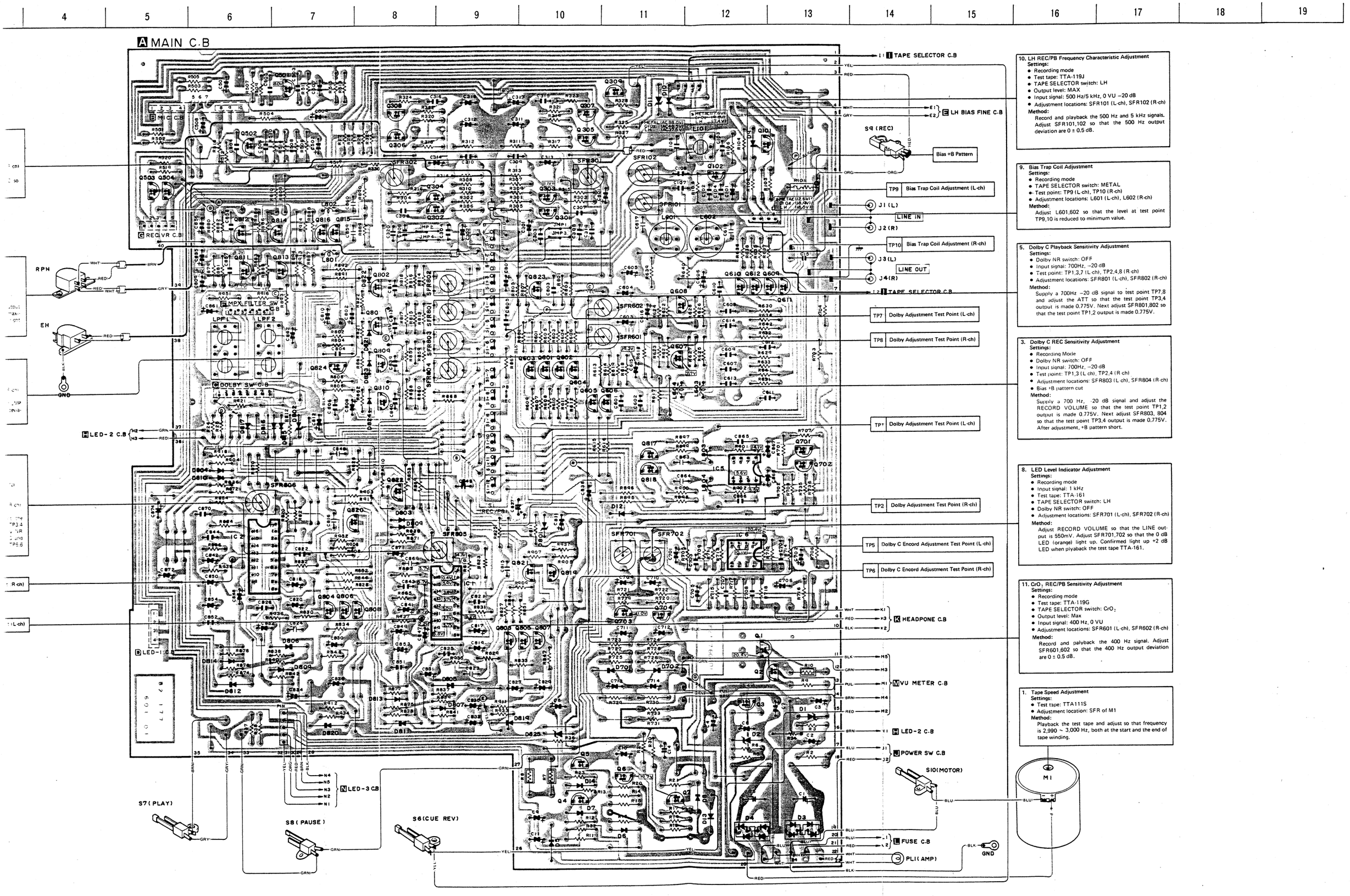
S7 (PLAY)

S8 (PAUSE)

S6 (CUE REV)

NOTES (1) B(+) Pattern Others pattern

(2) The voltage is the reference value measured with a tester (20 K ohms/V DC) when there are no signals.
An asterisk (*) indicates that the value was measured with a vacuum-tube voltmeter during recording.



10. LH REC/PB Frequency Characteristic Adjustment
Settings:
- Recording mode
- Test tape: TTA-119J
- TAPE SELECTOR switch: LH
- Output level: MAX
- Input signal: 500 Hz/5 kHz, 0 VU −20 dB
- Adjustment locations: SFR101 (L-ch), SFR102 (R-ch)

Method:
Record and playback the 500 Hz and 5 kHz signals. Adjust SFR101,102 so that the 500 Hz output deviation are 0 ± 0.5 dB.

9. Bias Trap Coil Adjustment
Settings:
- Recording mode
- TAPE SELECTOR switch: METAL
- Test point: TP9 (L-ch), TP10 (R-ch)
- Adjustment locations: L601 (L-ch), L602 (R-ch)

Method:
Adjust L601,602 so that the level at test point TP9,10 is reduced to minimum value.

5. Dolby C Playback Sensitivity Adjustment
Settings:
- Dolby NR switch: OFF
- Input signal: 700Hz, −20 dB
- Test point: TP1,3,7 (L-ch), TP2,4,8 (R-ch)
- Adjustment locations: SFR801 (L-ch), SFR802 (R-ch)

Method:
Supply a 700Hz −20 dB signal to test point TP7,8 and adjust the ATT so that the test point TP3,4 output is made 0.775V. Next adjust SFR801,802 so that the test point TP1,2 output is made 0.775V.

3. Dolby C REC Sensitivity Adjustment
Settings:
- Recording Mode
- Dolby NR switch: OFF
- Input signal: 700Hz, −20 dB
- Test point: TP1,3 (L-ch), TP2,4 (R-ch)
- Adjustment locations: SFR803 (L-ch), SFR804 (R-ch)
- Bias +8 pattern cut

Method:
Supply a 700 Hz, -20 dB signal and adjust the RECORD VOLUME so that the test point TP1,2 output is made 0.775V. Next adjust SFR803, 804 so that the test point TP3,4 output is made 0.775V. After adjustment, +8 pattern short.

8. LED Level Indicator Adjustment
Settings:
- Recording mode
- Input signal: 1 kHz
- Test tape: TTA-161
- TAPE SELECTOR switch: LH
- Dolby NR switch: OFF
- Adjustment locations: SFR701 (L-ch), SFR702 (R-ch)

Method:
Adjust RECORD VOLUME so that the LINE output is 550mV. Adjust SFR701,702 so that the 0 dB LED (orange) light up. Confirmed light up +2 dB LED when plyaback the test tape TTA-161.

11. CrO_2 REC/PB Sensitivity Adjustment
Settings:
- Recording mode
- Test tape: TTA-119G
- TAPE SELECTOR switch: CrO_2
- Output level: Max
- Input signal: 400 Hz, 0 VU
- Adjustment locations: SFR601 (L-ch), SFR602 (R-ch)

Method:
Record and palyback the 400 Hz signal. Adjust SFR601,602 so that the 400 Hz output deviation are 0 ± 0.5 dB.

1. Tape Speed Adjustment
Settings:
- Test tape: TTA111S
- Adjustment location: SFR of M1

Method:
Playback the test tape and adjust so that frequency is 2,990 ~ 3,000 Hz, both at the start and the end of tape winding.

AD-3200E,K

AD-3200E,K

NOTES (1) B(+) Pattern Others pattern

(2) The voltage is the reference value measured with a tester (20 K ohms/V DC) when there are no signals.
An asterisk (*) indicates that the value was measured with a vacuum-tube voltmeter during recording.

WIRING—2

1 2 3 4 5 6 7 8 9 10 11 12 13 14

A B C D E F G H I J

M LED MODULE C.B

1 (PUL) → A13
2 (RED) → A15
3 (BRN) → A12
4 (BRN) → A14
5 (BLK) → A11
A MAIN C.B

J POWER SW C.B

S11 POWER

(BLU) → A17
(RED) → A18
A MAIN C.B

I TAPE SELECTOR C.B

A MAIN C.B
A1 A7
S5
S5 TAPE SELECTOR

E LH BIAS FINE C.B

A MAIN C.B
A5 (GRY)
A4 (WHT)
VR2 LH BIAS FINE

L FUSE C.B

F1 F2
(BLU) (BLK) (BRN) (BLU) (RED)

B MIC C.B

MAIN C.B
5 6 7 8 9 10
J6 (R)
MIC
J5 (L)

J7 PHONENS

K HEADPHONE C.B

A MAIN C.B
(WHT) → A8
(BLK) → A10
(RED) → A9

DOLBY C

H LED-2 C.B

A MAIN C.B
(BRN) → A16
(GRN) → A37
A36
D54 D55

DOLBY NR

F MPX FILTER SW C.B

A MAIN C.B
6 5 4 3 2 1
S3 MPX FILTER
S3-2 S3-1 ON OFF

N LED-3 C.B

REC PLAY PAUSE
D56 D58 D57
(YEL) → A32
(ORG) → A31
(RED) → A30
(BLK) → A28
(BRN) → A29
A MAIN C.B

C DOLBY SW C.B

A MAIN C.B
8 7 6 5 4 3 2 1
S4 DOLBY B.C SELECTOR
VR1 RECORD LEVEL
S2 DOLBY NR
S2-2 S2-1 ON OFF

G RE

B(+) Pattern Others pattern
The voltage is the reference value measured with a tester (20 K ohms/V DC) when there are no signals.
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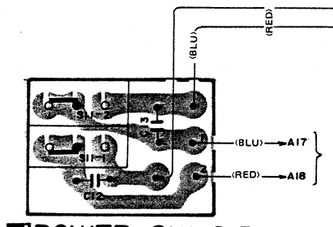
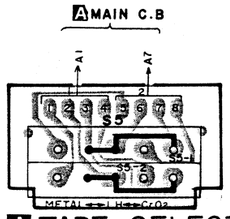
4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19



J POWER SW C.B

A MAIN C.B

A MAIN C.B



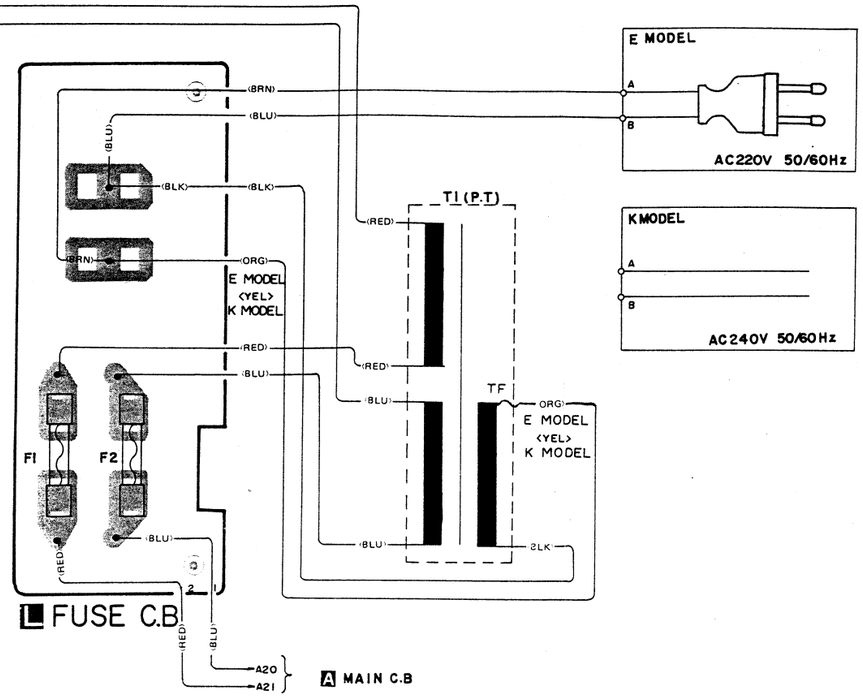
S5
TAPE SELECTOR

I TAPE SELECTOR C.B

VR2
LH BIAS FINE

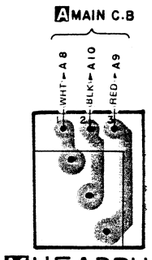
A MAIN C.B
A5 ← GRY
A4 ← WHT
VR2

E LH BIAS FINE C.B



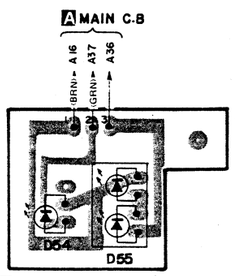
L FUSE C.B

A MAIN C.B



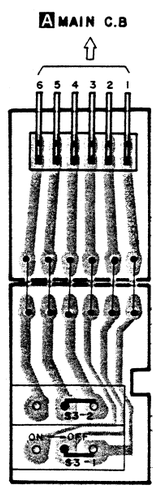
K HEADPHONE C.B

DOLBY C



H LED-2 C.B

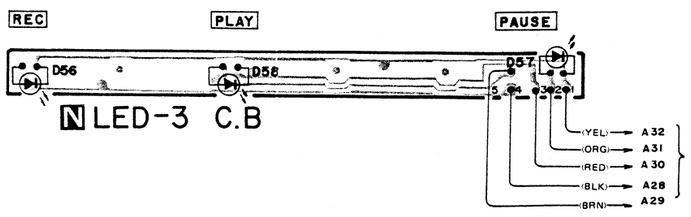
DOLBY NR



S3
MPX FILTER

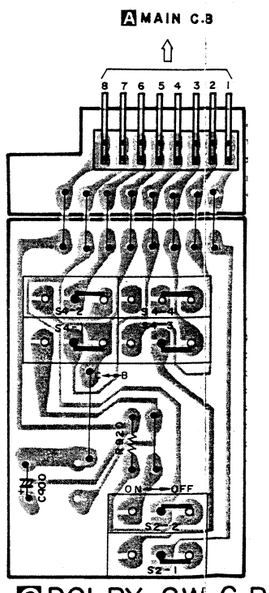
F MPX FILTER SW C.B

A MAIN C.B



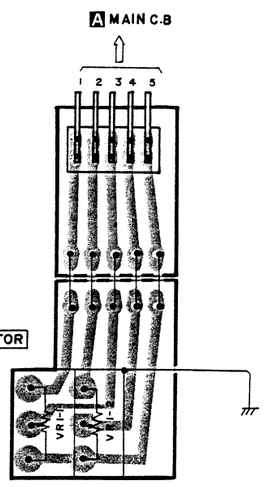
N LED-3 C.B

A MAIN C.B



C DOLBY SW C.B

A MAIN C.B



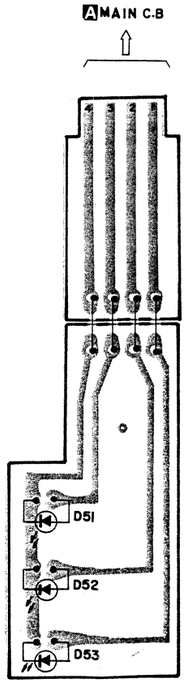
S4
DOLBY B.C SELECTOR

VR1
RECORD LEVEL

S2
DOLBY NR

G REC VR C.B

A MAIN C.B



CrO2
LH
METAL

D LED-1 C.B